



Our newsletter is no longer called **LABEL**, but **NarrowWeb** instead, because this is the new name of our business unit. Besides labels, narrow-web machines also produce numerous other products.

Visit us at the Siegwerk booth – you're sure to find it worthwhile

(Labelexpo – Booth 11 P 10)



- Experience the new Gallus EM 280 LED-UV combination printing machine in full action. Live demo twice a day.
- We shall be there with more than 20 application technicians who speak your language.
- Why not discuss your issues with our specialists while our hostesses serve you a refreshing drink.
- Find out about the benefits of the various low migration series. Low migration is a prerequisite when it comes to food packaging.



We're a leader in low migration ink systems

Siegwerk has the widest range of low migration UV inks, including low migration gloss and matt varnishes along with metallic inks. And this for all printing methods.

Low migration ink systems are indispensable for printing food packaging. Siegwerk has been intensively involved with developing and perfecting low migration ink systems for many years. We regard our market leadership in this field with a certain degree of pride. We shall be pleased to show you the best solutions for your applications.

Rolf Montag
Sales Director & Product Manager Narrow Web

In action at the Siegwerk booth:

LED-UV printing machine Gallus EM 280

LED-UV inks are printed on the Gallus EM 280 with LED-UV drying system and cured using state-of-the-art emitter technology.

The Gallus EM 280 LED combination printing machine with six printing units consists of one screen printing unit and five flexographic printing units. The UV inks for curing

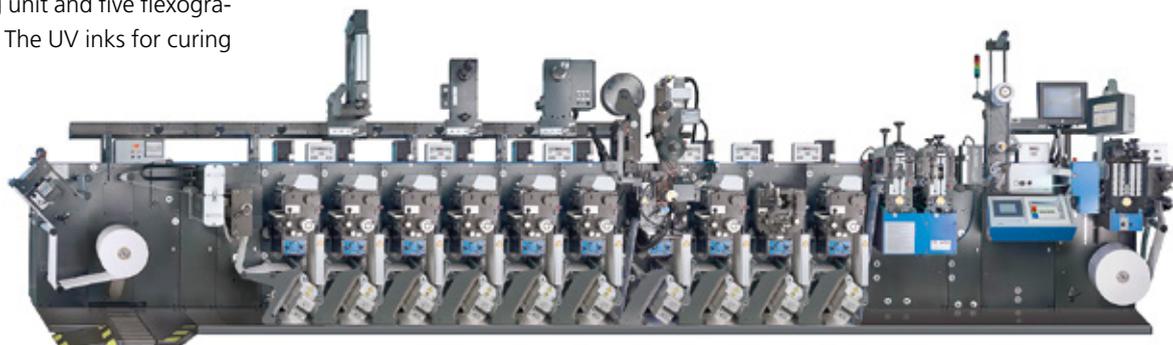
under LED light are newly developed special inks from Siegwerk.

Twice a day, you can see the Gallus EM 280 LED machine in action at our stand, operated by a Gallus printer. A specialist commenting on the presentations will be pleased to answer your questions.

The benefits of UV printing with LED:

- High energy efficiency
- Maintenance-free, no wear
- No need for ozone extraction
- Improved occupational safety
- High production speed

Gallus EM 280 LED combination printing machine



LED-UV – the concept for sustainability

**Less energy consumption,
no ozone, no extraction,
– more occupational safety**

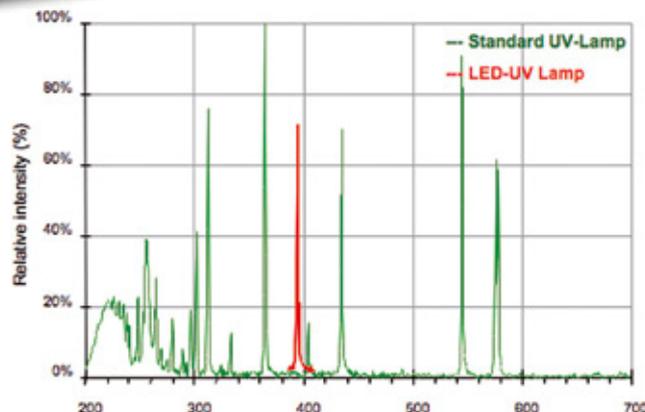
LED emitters use less energy, do not generate any ozone and have a longer service life. They do not require any warm-up phase, making them ready for immediate operation.

The unique achievement by the Siegwerk ink specialists involved developing UV inks for the specific radiation spectrum of LED light, which **fully cure despite the low radiation energy** and which are an equal to conventional UV inks when it comes to drying speed.

UV flexographic printing inks, UV screen printing inks and UV overprint varnishes for production with

LED-UV dryers can be applied and cured perfectly. Machine speeds of over 100 m/min are attained without any problem.

Besides the low energy consumption, the lack of any need to extract ozone is also an advantage. The LED lamps do not require any warm-up phase and have a very long service life. They develop minimal heat, while the highly energy-rich IR radiation along with



hazardous UV-B and UV-C radiation are a thing of the past.

Spectrum of an LED-UV lamp in comparison to conventional mercury emitters.

Source: Siegwerk

«The future has already begun»

Interview with David Baumann, Product Manager Gallus Group



Mr Baumann, since when has Gallus been developing UV printing machines equipped with LED dryers?

D. Baumann: Sustainability is one of our main concerns. We considered at a very early stage how we could utilise energy-efficient LED technology for our printing machines. As is well known, we exhibited a functioning machine with LED-UV dryers at the Labelexpo 2009 – as a pioneer so to say – a machine with which we also printed labels.

Siegwerk had developed the UV inks curing under LED light for this machine at that time – also as a pioneer.

D. Baumann: Yes, the collaboration has worked well. The project developed in partnership shows that sustainability and innovation can be combined well with one another.

A long time has passed since the Labelexpo 4 years ago. What has changed in the meantime?

D. Baumann: The power of the emitters was still much lower then than today. The LED-UV emitters we use today have twice as high a radiant power at 16 W/cm². That makes it possible to cover a broad application spectrum without restricting productivity.



What advantages do label printers have nowadays if they opt for LED technology?

D. Baumann: On the one hand, it must surely be the lower energy consumption, leading to a reduction in energy costs. On the other hand, label printers can also benefit from significantly higher process reliability during drying. The LED-UV drying system from Gallus provides a constant drying power over its entire service life and is practically maintenance-free.

What sets Gallus apart from other providers with LED-UV systems?

D. Baumann: You have to be careful not to compare apples with pears. The LED-UV technology developed by Gallus involves a high-power emitter for use in industrial production, where the highest level of constant power is demanded. In many other systems the actual power is far below the declared peak values.

How will LED-UV technology develop in label printing? And how does Gallus see the future for its printing machines?

D. Baumann: I'm convinced that LED-UV technology will supersede the established mercury tube technology over the medium term. Gallus would like to give its customers the opportunity to benefit right now from energy-saving LED-UV technology. At this year's Labelexpo, Gallus will be the sole manufacturer to produce live a label that has the benefits of digital and flexographic printing combined and which is fully dried using LED-UV technology.

www.gallus-group.com

Siegwerk's most important low migration ink series

Sicura FLEX 39-10 LM

Standard low migration UV-flexographic ink series with very good flow and adhesion properties. The majority of all label applications in the food industry can be realised with this established series.

Sicura FLEX 39-20 LM

This migration-optimised UV-flexographic series has been developed specially for demanding applications in the food industry. It is also ideally suitable for unsupported films and is distinguished by the lowest possible migration.

Sicura LM 361

This low migration UV-offset series for paper/cardboard and selected plastic substrates can be printed excellently with a stable ink/water balance while offering the lowest tendency to migrate. It is used for demanding applications, such as fruit juice or dairy product packaging.

Sicura PLAST NUTRITEC

The ideal UV-offset series for diverse plastic substrates. Sicura PLAST NUTRITEC is a development of the latest generation with low migration, barely perceivable odour and excellent adhesion properties.

Sicura WL NUTRITEC

Low migration series for waterless UV-offset printing on plastic substrates and coated papers. Perfect printability, good adhesion

and very good scratch and rub resistance with minimum odour and migration potential. Suitable for packaging in the pharmaceutical and food industry.



Printed with Sicura PLAST NUTRITEC

Sicura SCREEN – low migration screen printing white

This brand new white was recently tested in migration analyses with self-adhesive labels for food packaging, all constituents achieving positive results. The new white is silicone-free and can be printed very well with the UV-flexographic series 39-10 LM and 39-20 LM. Available from November this year.

Label LWB LM 2

These newly developed water-based flexographic inks are colour intensive, guarantee excellent printing quality and fulfil the highest requirements regarding migration safety. In the case of food packaging, it is also important to comply with migration limit values when using water-based inks.

Siegwerk can also provide corresponding low migration gloss and matt varnishes as well as metallic inks for all ink series.

When printing labels and packaging for food, we recommend that you consult the customer information **«Selection of Siegwerk UV Low Migration Systems»**. Ask your Siegwerk customer advisor.

Newly optimised: UV waterless offset low migration

Process: UV offset waterless

Application: Labels, food packaging

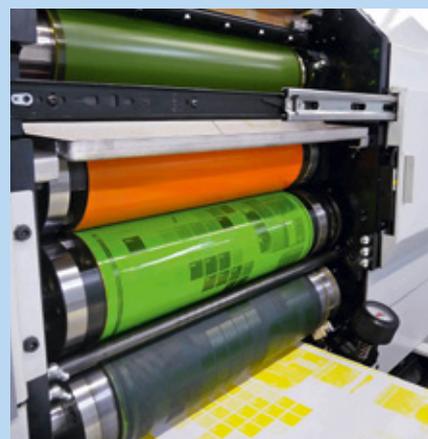
Series: Sicura WL NUTRITEC

These new UV waterless offset inks offer perfect printability and adhesion with minimum migration potential and odour.

The new ink series has been developed to meet the stricter requirements in the area of odour and migration. That makes it perfect for labels and packaging in the

pharmaceutical and food industry. The series replaces the highly regarded inks of the Sicura WL-LM series.

Thanks to new components specially selected for this ink generation, the series is equally suitable for printing plastic materials and coated papers. **The adhesive properties along with scratch and rub resistance revealed by the series are very good.** The inks are distinguished by low dot enlargement and do not scum even at increased temperatures. Available from November this year.



Source: Codimag

New low migration UV laminating adhesive

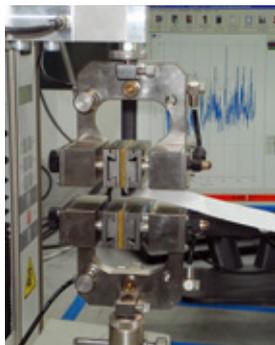
Process: UV flexographic printing | Application: Laminated labels for food packaging | Product number: 85-600595-4 laminating adhesive 39-10 LM

An important new development from Siegwerk that meets the increased requirements in the food industry.

Practically all conventional UV laminating adhesives contain mono-acrylates and di-acrylates in the binding agent and that makes them barely able to fulfil the statutory regulations applicable for the food packaging. The small molecules can migrate through the foil into the product inside.

Thanks to the new UV laminating adhesive without the above acrylates, Siegwerk has succeeded in manufacturing a **laminating**

adhesive with very low migration potential. Printers of laminated labels look set to welcome the new Siegwerk range positively.



Bond strength measuring

New screen printing white for optimum adhesion

**Process: UV screen printing
Application: Labels
Series: 78-6 opaque white 124
Product number: 81-010295-4**

Superb adhesion on diverse materials, with very high opacity and good scratch resistance.

With this new opaque white, the Siegwerk ink developers have succeeded in developing yet another excellent product. No matter where it has been used, it has never failed to attract words of praise.

The new white has a **higher pigmentation than normal and reveals an impressive opacity.** It is silicone-free and can be printed without difficulties. The surface remains very clean and does not exhibit any pin holes. The printed white can be overprinted with other printing methods, e.g. screen, flexographic, offset or letterpress printing, without any problem.

Outstanding new UV matt varnish low migration

**Process: UV flexographic printing
Application: Labels for food packaging and cosmetics
Product number: 85-600638-2**

Impressive matt effect thanks to new matting additive, user friendly, with constant viscosity.

Matt overprinting varnishes provide highly interesting effects in interaction with glossy areas. The new matt varnish is very reactive, reveals a beautiful, uniformly matt surface and can be processed without any problem. It does not thicken in the printing unit. Stirring the content of the container well before starting printing and during longer printing orders is recommended.

Printer's corner

How do you optimise the matt effect in UV flexographic printing?

With **solvent-based inks**, the matt surface of the ink film results from the added matting agent, whose particles «protrude» as it were from the ink surface if the ink film shrinks during the drying process.

As **UV inks** cure in a fraction of a second and practically without shrinking, matt effects are more difficult to attain. A matting agent with particles is also added to the UV ink. The particles are given the task of remitting the incident light, i.e. reflecting in diverse directions, which causes a diffuse light scattering.

When printing UV flexographic matt varnish, it is important to ensure the correct volume [cm^3/m^2] and ruling [L/cm] of the anilox roller. If too much varnish is applied, a closed, smooth layer surface will result, which reflects the light uniformly hence making it glossy. If the varnish is applied sparingly, the matting particles can better fulfil their task of scattering the light as diffusely as possible. An anilox roller with as low a dip volume as possible must therefore be used.

The cell size is also important. If the cells are not coordinated to the matting material or are too small, the larger particles will not then be transported in the matting agent. That means you should usually select the cells as large as possible.

Anilox rollers with 6–8 cm^3/m^2 volume, which are engraved with a 60° hexagonal cell, are recommended for a good matt effect. No line screen rollers should therefore be used. The varnish should also be circulated in the coating unit using a circulation pump, so as to prevent thickening in the ink chamber or chambered doctor blade.

Another important prerequisite is to stir the contents of the container well before beginning printing. Stirring should also be repeated regularly when printing longer printing orders and during manual replenishment of the chambered doctor blade.

Do you have a question of general interest?

Ask your Siegwerk application technician – he or she will be pleased to pass it on.